



NETWORK CAMERA

INSTALLATION AND OPERATION MANUAL

MODEL
NM-C150SD

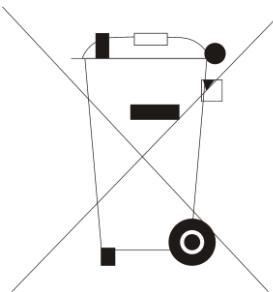


**THIS INSTRUCTION MANUAL IS IMPORTANT TO YOU. PLEASE
READ IT BEFORE USING YOUR NETWORK CAMERA.**

This unit complies with the requirements of the EC Directive 2004/108/EC, "EMC Directive". The requirements for the susceptibility according to EN 55024 and the requirements for interference according to EN 55022 are observed for the operation on residential areas, business, light industrial premises and in small scale enterprises, inside as well as outside of the building. All places of operation are characterized by their connection to the public low voltage power supply system.

Warning

This is class A product. In a domestic environment this product may cause radio Interference in which case the user may be required to take adequate measures.



Note: This symbol mark is for EU countries only. This symbol mark is according to the directive 2002/96/EC Article 10 Information for users and Annex IV, and/or to the directive 2006/66/EC Article 20 Information for end-users and Annex II.

Your MITSUBISHI ELECTRIC product is designed and manufactured with high quality materials and components which can be recycled and/or reused.

This symbol means that electrical and electronic equipment, batteries and accumulators, at their end-of life, should be disposed of separately from your household waste.

If a chemical symbol is printed beneath the symbol show above, this chemical symbol means that the battery or accumulator contains a heavy metal at a certain concentration. This will be indicated as follows: Hg: mercury (0.0005%), Cd: cadmium (0.002%), Pb: lead (0.004%)

In the European Union there are separate collection systems for used electrical and electronic products, batteries and accumulators.

Please, dispose of this equipment, batteries and accumulators correctly at your local community waste collection/recycling centre.

Please, help us to conserve the environment we live in!

IMPORTANT SAFEGUARDS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that product heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prongs are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where thy exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. ***CAUTION - THESE SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED SERVICE PERSONNEL ONLY. TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.***
15. Use Certified/Listed Class 2 power supply transformer only.
16. Don't remove the outer covering of this unit.

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Chapter 1 — Introduction

1.1 FEATURES

The Fastrax X18 Network Dome Camera, PC Software makes up the building blocks for any surveillance/security system. And Multiple Network Dome Cameras, no place is too large for monitoring. Extensible and flexible architecture facilitates remote control functions for a variety of external switching devices such as multiplexers and DVRs.

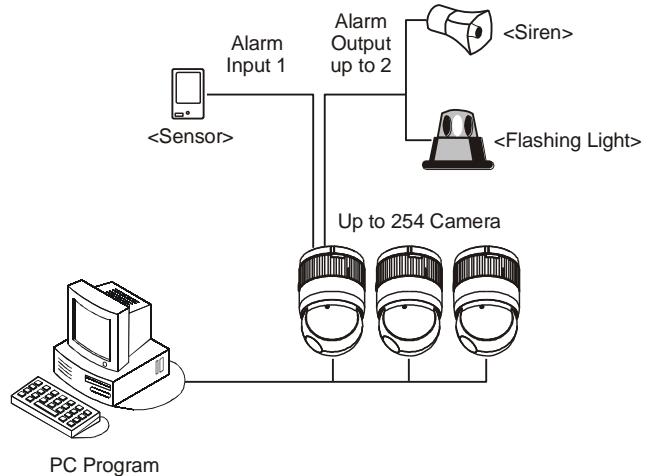
- Built-in 18x times optical power zoom camera with True Night Shot function.
- Full frame rate up to D1 (25fps@720x576) resolution compatible with MPEG4 standard.
- 80 Preset positions.
- 8 Tours consist of Preset, Auto-Scan and other Tours can be programmed with over 300 functions and Preset location. While moving, each Preset scan can be watched in smooth **Vector Scan** mode.
- 8 Auto Scans including vector scan and 1 Endless Auto-Scan.
- 8 Privacy zones.
- 2 Alarm inputs / 1 Aux outs (NC & NO).
- Variable speed from 0.1°/sec to 90°/sec.

Turbo speed is Max 360°/sec with Ctrl key pressed.

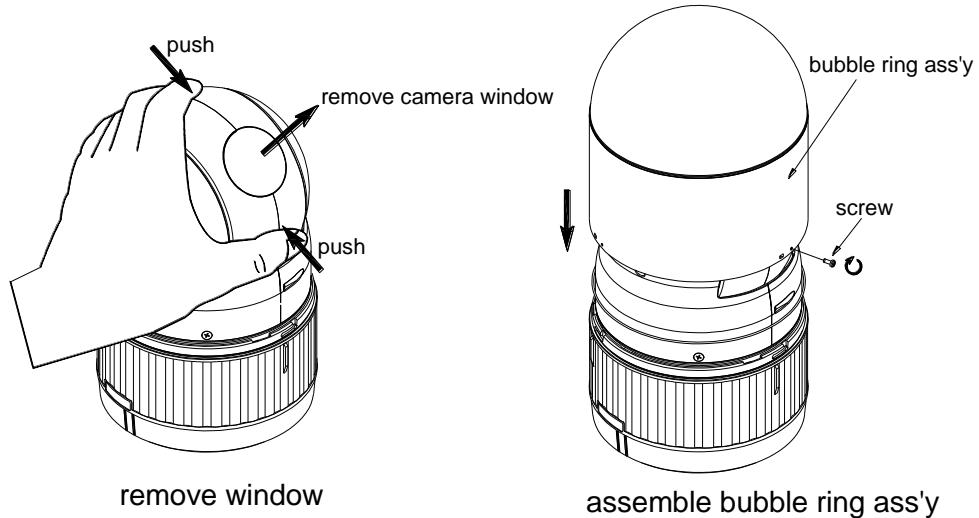
Pan / Tilt speed is inversely proportional to the zoom ratio.

Maximum speed is 380°/sec when preset command.

- Programmable user preferences (alarm, preset, title, etc.).
- Up to 999 selectable camera addresses (Setting up by PC Software).
- Built-in RS-485 receiver driver.
- Built-in power-line surge protection and lightning protection.
- Built-in network interface (10Base-T/100Base-TX) for remote monitoring by PC.
- Interface protocol : TCP/IP, HTTP, UDP, DHCP, RTP, RTSP, SMTP, DDNS.
- Clear bubble with black liner (shelter) for concealing the camera.



[Figure 1 – Typical System Configuration]



[Figure 2 – Assemble bubble ring ass'y]

Note: It is recommended to remove camera window for improving picture quality when you use bubble ring ass'y.

Chapter 2 — Installation and Configuration

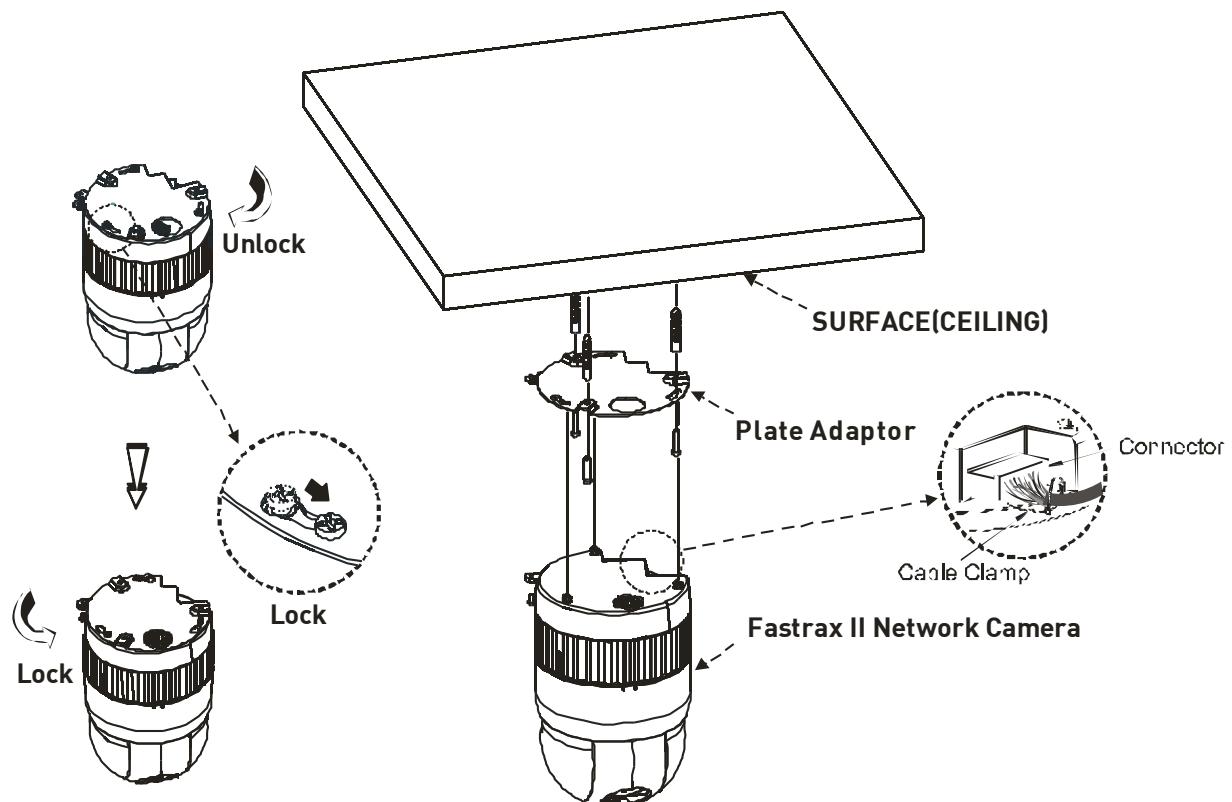
2.1 Package Contents

The package contains the following.

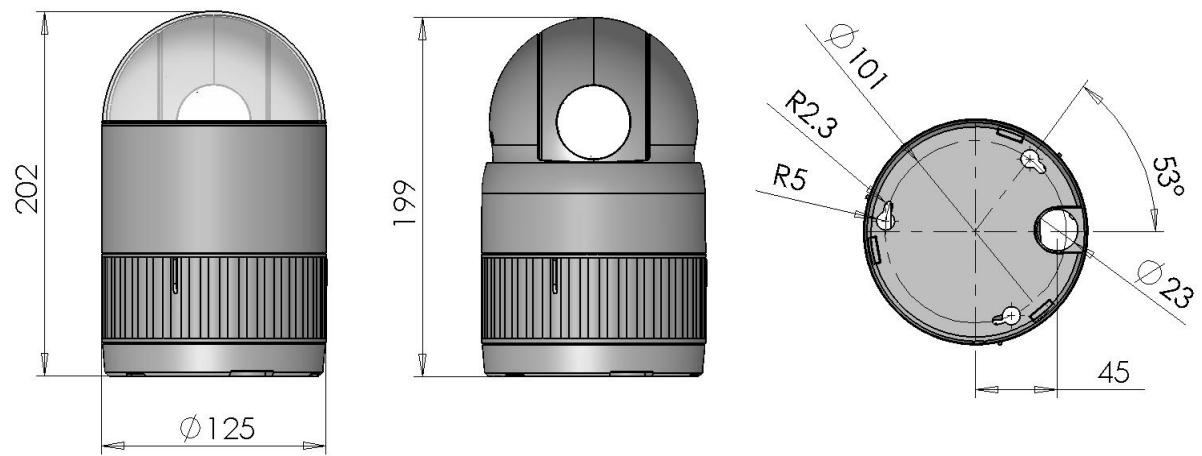
Network Dome Camera	1
Bubble Ring	1
Quick Guide	1
Assembly Screws for Attaching Fastrax X18 Network Camera	3
Plastic Anchor	3
Plate Adaptor	1
I/O Cable	1
CD	1
Cable Clamping Band	1

The Network Dome Camera is for use in surface mounting applications and the mounting surface should be capable of supporting loads up to 10lb (4.5kg).

The Network Dome Camera's base should be attached to a structural object, such as hard wood, wall stud or ceiling rafter that supports the weight of the Network Dome Camera.

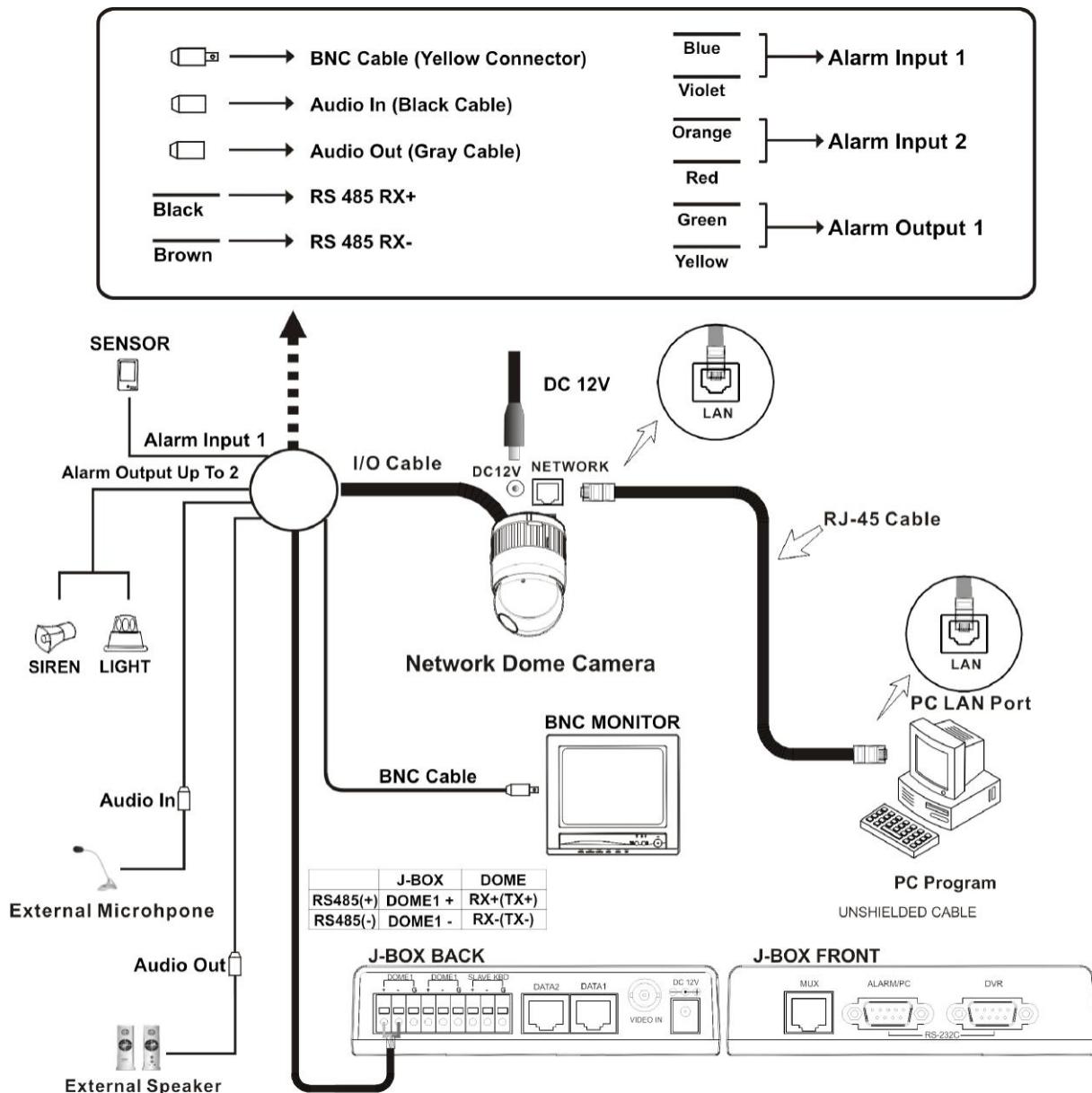


[Figure 3 – Installation]



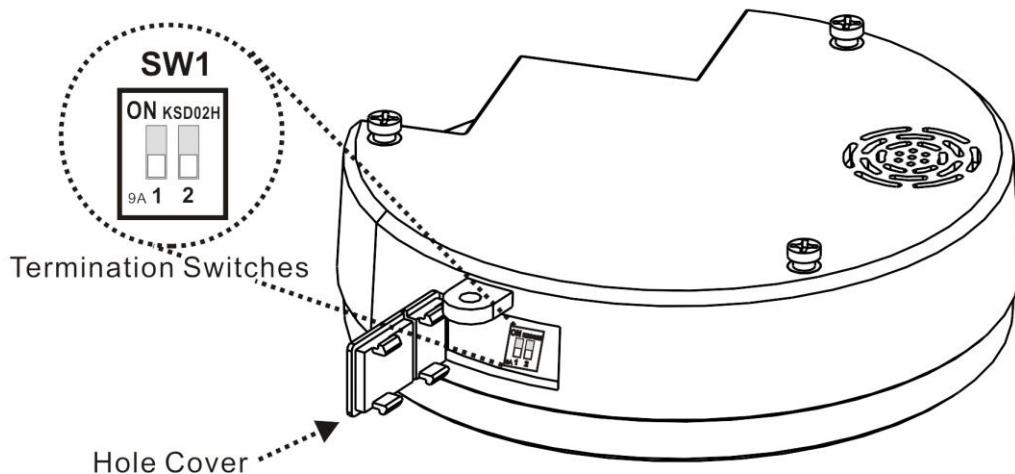
[Figure 4 – Dimension]

2.2 Basic Configuration of Fastrax X18 Network Dome Camera System



[Figure 5 – Basic installation diagram]

The Network Dome Camera must be installed by qualified service personnel in accordance with all local and federal electrical and building codes. The system should be installed according to Figures 5 through 10.

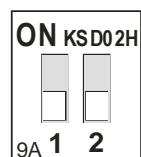


[Figure 6 – Layout of Switches]

2.3 Setting Network Dome Camera Termination

The device which is connected at end of line, whether it be a Network Dome Camera or keyboard controller, must have the cable for communication terminated by setting the appropriate DIP switch. Without proper termination, there is potential for control signal errors. Total length of the cable for communication should not exceed 1.2km.

SW1



SW1	1	2
Terminated	ON	ON
Not terminated	OFF	OFF

[Figure 7 – Setting Network Dome Camera Termination]

2.4 Setting Network Dome Camera Address (ID)

To prevent damage, each Network Dome Camera must have a unique address (ID). When installing multiple Network Dome Cameras using a multiplexer, it is suggested that the Network Dome Camera address match the multiplexer port number.

If you want to set the address more than 999, you should contact the service provider.

Refer to ‘3.3.4 PTZ Setting’ section for detailed information.

2.5 Setting Network Dome Camera Protocol

If a Network Dome Camera is to be installed with a Fastrax keyboard controller, select F2 protocol.

Consult service personnel if a Network Dome Camera is installed with device other than a keyboard controller.

Refer to ‘3.3.4 PTZ Setting’ section for detailed information.

2.6 Connections

• Connecting to the RS485

The Network Dome Camera can be controlled remotely by an external device or control system, such as a control keyboard, using RS485 half-duplex serial communications signals. Connect Marked Rx+, Rx- to Tx+ and Tx- of the RS485 control system.

• Connecting Video out connector

Connect the video out(BNC) connector to the monitor or video input.

• Connecting Alarms

AL1 to 2 (Alarm In)

You can use external devices to signal the Network Dome Camera to react on events. Mechanical or electrical switches can be wired to the AL (Alarm In) and GND (Ground) connectors. See “3.3.3 Alarm Setting – Alarm In” for configuring alarm input.

GND (Ground)

NOTE: All the connectors marked GND are common.

Connect the ground side of the Alarm input and/or alarm output to the GND connector.

NC(NO) (Normal Close or Normal Open : Alarm Out)

The Network Dome Camera can activate external devices such as buzzers or lights. Connect the device to the NC(NO) (Alarm Out) and COM (Common) connectors. See “3.3.3 Alarm Setting – Alarm Out” for configuring alarm output.

• Connecting the Network

The Network Dome Camera supports the operation through the network. Therefore, it is necessary to connect a standard RJ-45 cable to it. Generally a cross cable is used for directly connection to PC, while a direct cable is used for connection to a hub.

• Connecting the Power

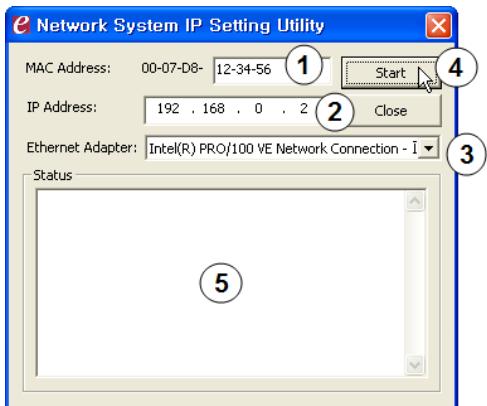
Connect the power of DC 12V to the Network Dome Camera.

Use certified / Listed Class 2 power supply transformer only.

2.7 DOME NETWORK CAMERA IP ASSIGNMENT

Dome Network Camera that is first connected to network basically has no IP address. So, it is necessary to allocate the IP address of Dome Network Camera with an IP allocation program.

Open the program folder installed with the provided CD and execute “IP Setting Utility”.



[Figure 8 – IP Setting Utility]

1. MAC Address

Enter MAC address of the product for IP input.

2. IP Address

Enter IP address to use.

3. Ethernet Adapter

In case there are several network cards, select a card to use for the operation of Dome Network Camera.

4. Start

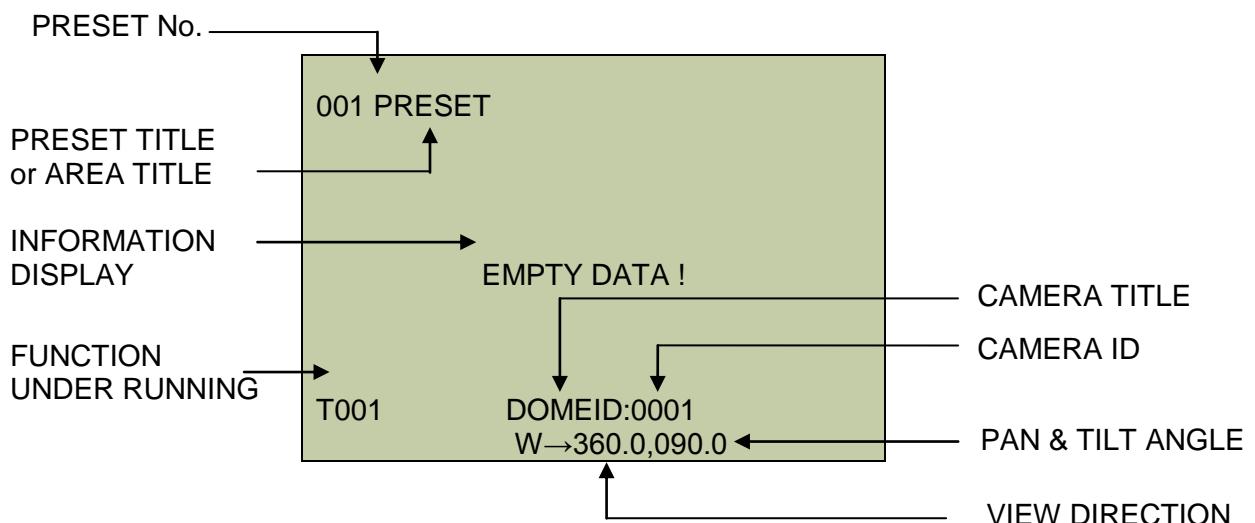
Allocate input IP to the Dome Network Camera to use. When a completion message appears on "5" Status window in several seconds or minutes, input completes its process. You can add additional IPs to other devices continuously.

2.8 Getting Started

Once installed apply power to the Network Dome Camera. The Network Dome Camera will start a configuration sequence.



[Figure 9 – Starting Camera OSD on CRT Monitor]



[Figure 10 – OSD Position]

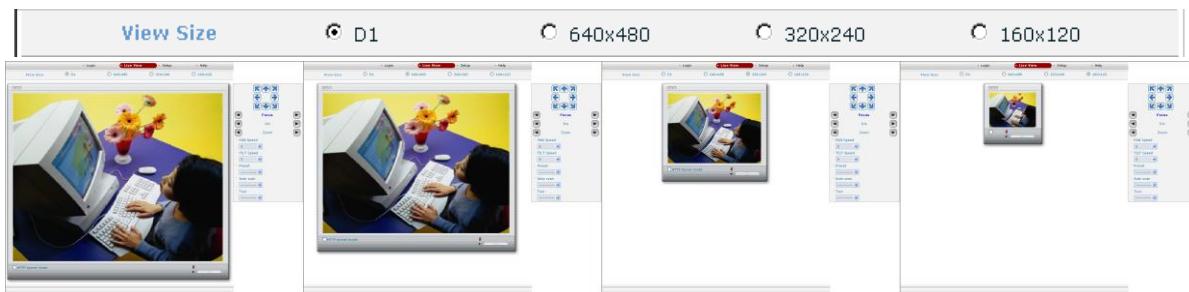
Chapter 3 — Operation by Web Browser

3.1 Connecting the Network Dome Camera by Web Browser

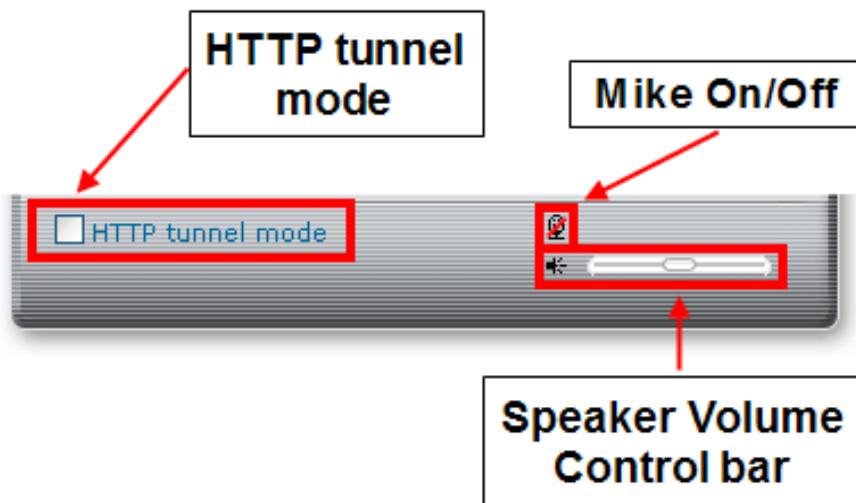
- Execute the Web Browser on the PC.
- Enter the Network Dome Camera address on the address window of the Web Brower and execute it.
Ex) http://192.168.0.2/
(If the Network Dome Camera has no IP address or its IP address is wrong, users will fail to connect the Network Dome Camera. In this case, users will have to connect the Network Dome Camera the Web Browser after entering the IP address with the IP Utility.)
- Refer to '2.7 Network Camera IP Assignment' section for detailed information.
- If a security window for the ActiveX Controller installation appears, press the Confirm and install it.
- If it is not connected in the Internet, from the CD-ROM install the ActiveX Controller by manual operation.

3.2 Real-Time Monitoring

The monitoring screen comes in four screen modes like D1, 640 X 480, 320 X 240, and 160 X 120. Users are allowed to select the most suitable one out of those modes. Please, adjust the mode in accordance with your PC specifications and monitoring purposes.



In case of real-time monitoring with the Web Browser, one Network Dome Camera will be connected to just one Web Brower. However, this case is not suitable for monitoring various screens at the same time. If users are to monitor various images at the same time, please contact your dealer.



HTTP tunnel mode

When the screen is not indicated, check. (Notice: "unicast mode" only it is applied.)

If users are to control the volume of a microphone and speaker connected to a user PC, they should adjust the user PC volume regardless of the microphone and speaker volume control set in Network cameras.

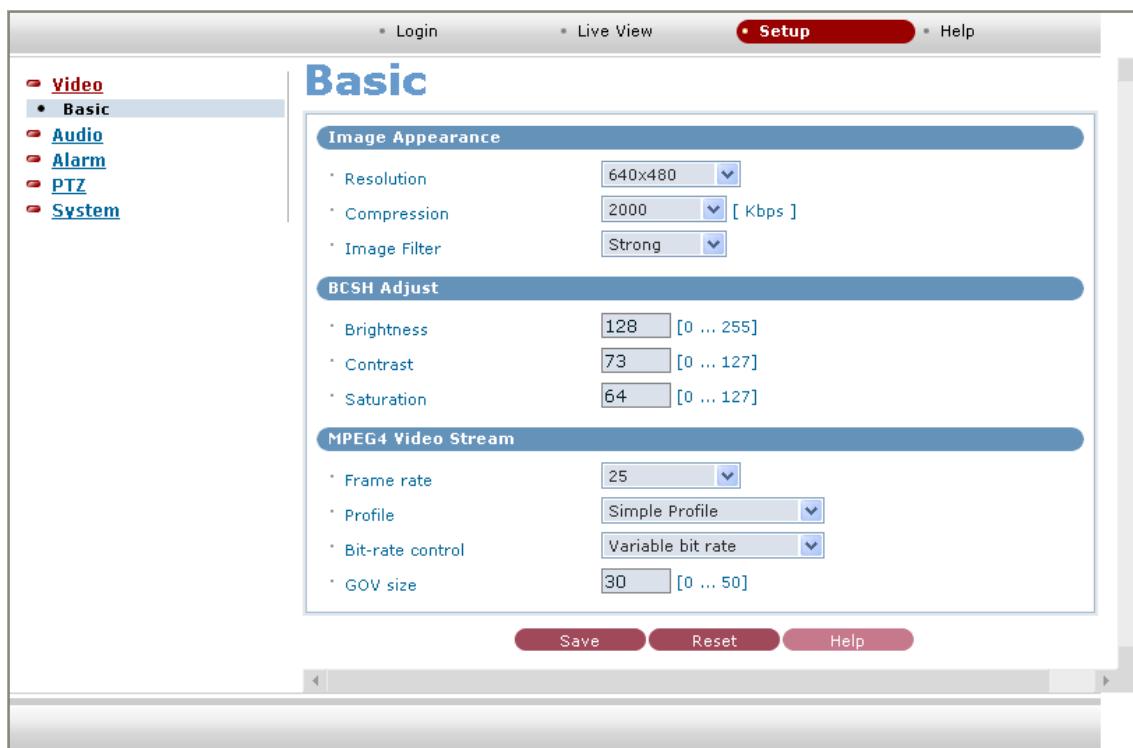
3.3 Network Dome Camera Setting

Network Dome Camera setting is divided into video, audio, alarm, PTZ and system settings. And the detailed screen will be provided for each setting.

3.3.1 Video Setting

The video setting is classified into Basic. The Basic menu includes a setting menu for real-time monitoring. Its setting only is enough to complete a setting for viewing the monitoring screen. The detailed setting menu is able to perform screen sizing, filtering, compressibility, and brightness control.

● Basic Setting



■ Image Appearance

Resolution

It enables users to determine a basic screen size when having an access through the Web Browser or PC program.

The screen size control comes in four modes like D1, 640 X 480, 320 X 240, and 160 X 128. Users can reset the selected screen size anytime while monitoring the screen on a real-time basis.

Image filter

The image filter control enables users to reinforce the image quality in a strong or weak way. The default is "disabled."

Compression

When it is necessary to adjust a smooth transmission status according to network situations, users can increase the compressibility to carry out the network transmission stably. On the other hand, when it is necessary to maintain a detailed monitoring screen by enhancing the image quality, users can do so by decreasing the compressibility. In ease case, please adjust this function according to the network status and monitoring purposes. The default is 2000(Kbps).

■ BCS Adjust

Brightness

The screen brightness can be adjusted from 0 to 255 stages, and the default is 128. The brightness may differ depending on the equipment and PC monitor status.

Contrast

The screen contrast can be adjusted from 0 to 127 stages, and the default is 73. The contrast may differ depending on the equipment and PC monitor status.

Saturation

The screen saturation can be adjusted from 0 to 127 stages, and the default is 64. The saturation may differ depending on the equipment and PC monitor status.

■ MPEG4 Video Stream

Frame rate

Upon the real-time play, users should select a frame refresh rate per second. If the rate is high, the image will become smooth. On the other hand, if the rate is low, the image will not be natural but it can reduce a network load.

Bit-rate control

Variable bit rate (VBR) : It refers to the type of using a variable bit rate (VBR). Increase a bit rate for the image with much motion, and decrease a bit rate for the image with little motion. The basic setting value is a VBR type.

Constant bit rate (CBR) : Using a constant bit rate (CBR) may guarantee a stable play. However, if a large amount of data is not required, it may cause the waste of a transmission rate. If a large amount of data is required, it may cause the image quality to be decreased.

Profile

SP (Simple Profile) is available up to the CIF resolution and 384kbit/s.

ASP (Advanced Simple Profile) is available up to the 4CIF resolution and 8000kbit/s.

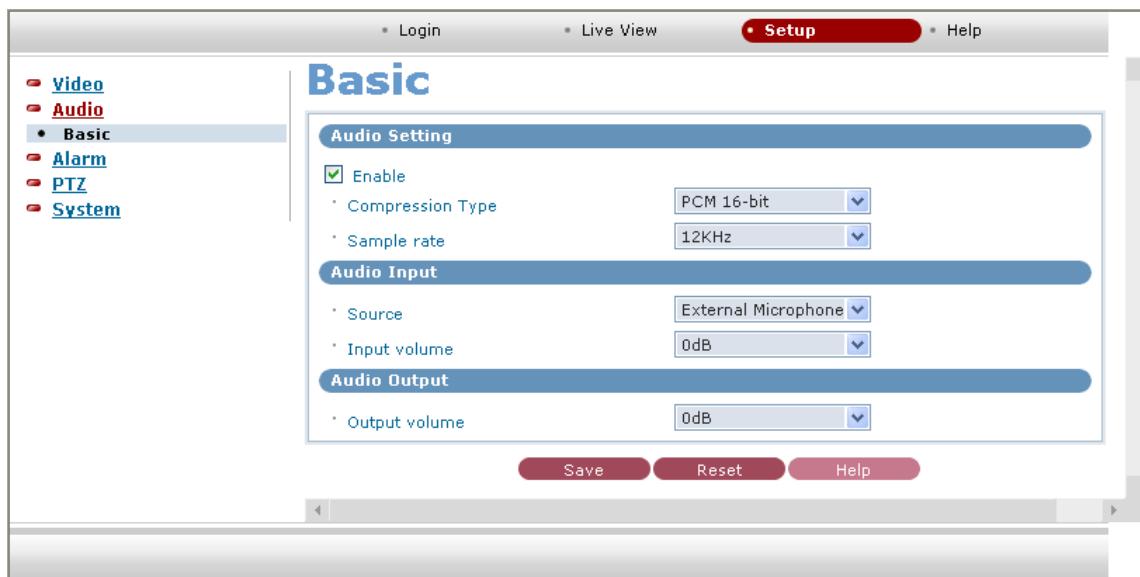
GOV size

Enter the GOV (group of VOP) size. If users want to have a high quality of fast image one by one, please decrease the value. For the purpose of general monitoring, please do not change a basic value. Such act may cause a problem to the system performance. For the details of GOV setting, please contact the service center.

3.3.2 Audio Setting

● Basic Setting

Users can use a microphone and speaker by using the audio function.



■ Audio Setting

Compression type

Users can increase a transmission rate or enhance a tone quality by selecting an audio compression mode. The PCM 16-bit implements the best tone quality, while the PCM 8-bit corresponds to that of radio sound.

Sample rate

If a sample rate is low, the tone quality will go down but the transmission rate will go up. If a sample rate is high, the tone quality will be better, but the transmission rate will drop. Please, adjust its rate in accordance with a network status or purposes.

■ Audio Input

Source

Users can select either MIC input or LINE input, but cannot use both at once.

Input Volume

Users can control the input volume by adjusting the microphone volume.

■ Audio Output

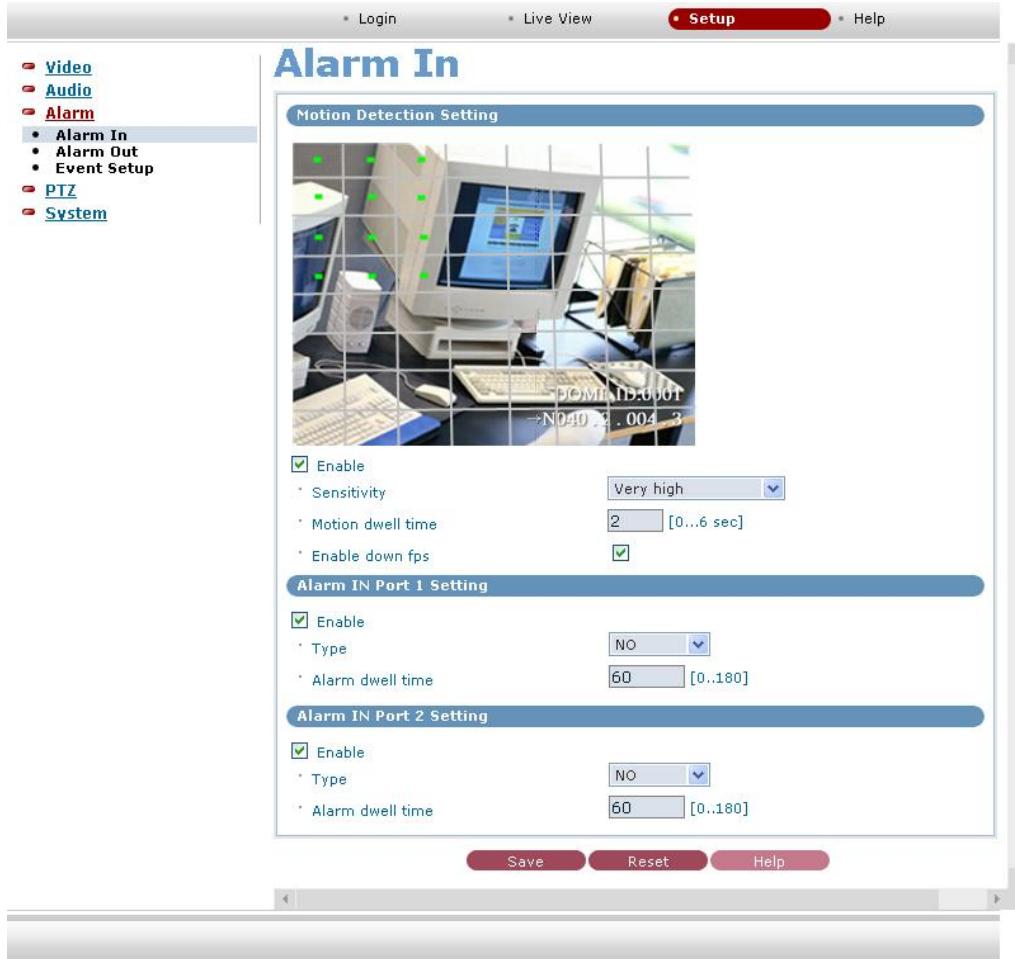
Output Volume

Users can control the output volume of the speaker connected to the Network Dome Camera.

3.3.3 Alarm Setting

● Alarm In Setting

This function enables users to conduct the alarm input/output setting and event setting.



■ Motion Detection Setting

Motion information is processed by splitting the screen into 64 areas. Each area can be selected by clicking with the mouse, and green point shown in the selected area. The area which uses the motion information as an event is shown green point, while the area which does not use the information is indicated empty.

Enable

Check this item when using the motion information.

-Sensitivity

This sets up the sensitivity for the motion detection.

-Motion dwelling time

This sets up the event dwelling time when a motion occurs. This can be set in the range of 0 ~ 6 seconds. When an event occurs, the motion icon at the upper right blinks in red for the preset time period. When another motion occurs during the motion event, the dwelling time is extended on the basis of the occurring time of the second event.

-Enable down FPS

This feature decreases frame rate to about 1 FPS when no motion event occurs, while operates with the frame rate set in this item when a motion event occurs.

■ Alarm IN Port 1 Setting

Type

Select the operation mode of the Alarm Input 1.

Select either 'N.O.(Normal Close)' or 'N.C.(Normal Open)'

Alarm dwelling time [0~180]

Designate a running time for alarm occurrence. Select one out of 0 to 180 seconds.

■ Alarm IN Port 2 Setting

Type

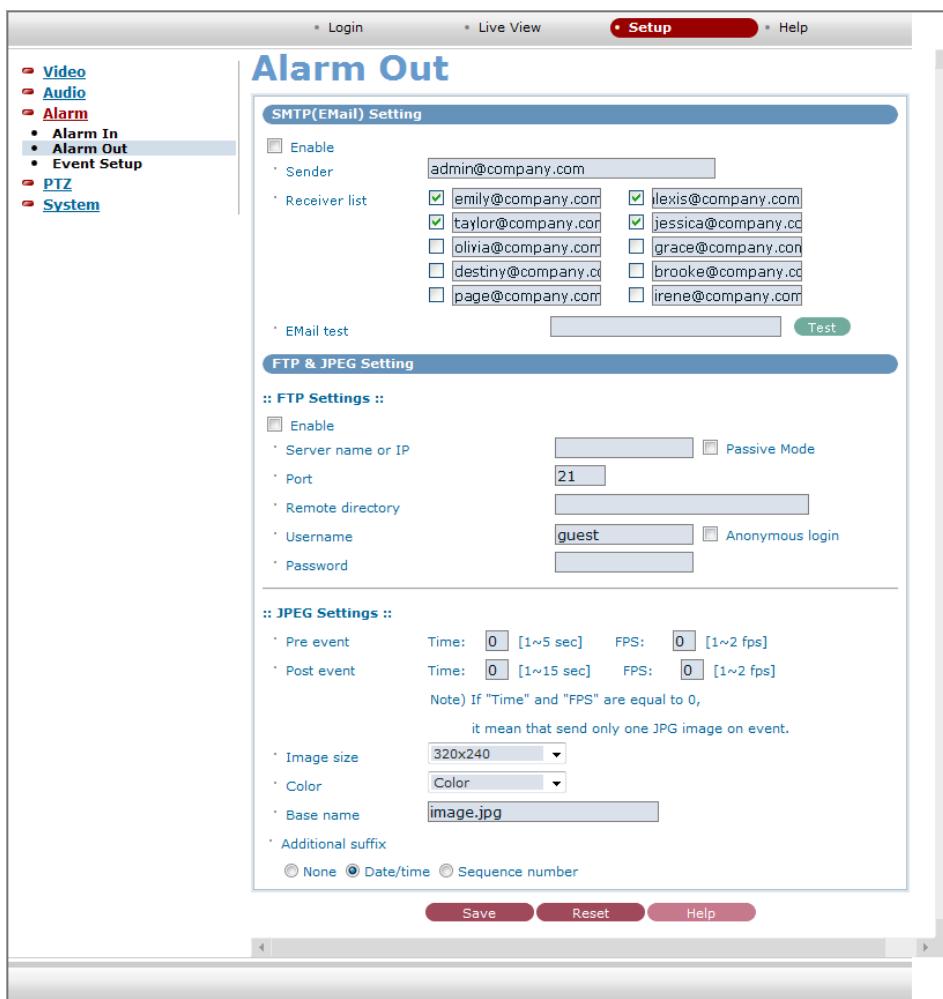
Select the operation mode of the Alarm Input 2. Select either 'N.O.' or 'N.C.'

Alarm dwelling time [0~180]

Designate a running time for alarm occurrence. Select one out of 0 to 180 seconds.

● Alarm Out Setting

Upon the alarm occurrence, this function enables users to receive a mailing or ftp service to the mail address designated by users.



■ SMPT(eMail) Setting

Sender: Enter an eMail address to send a mail.

Receiver list: Enter up to 10 eMail addresses to receive a mail.

Email test: Enter an eMail address to test for sending a mail.

Test button : Test for sending a mail with a value entered.

■ FTP & JPEG Setting

-FTP Settings

Enable

Checks to activate the FTP function.

Sender name or IP: Enters the FTP IP address or host name to be received.

Port: Enters the port number of FTP to be received.

Remote Directory: Enters the location for saving the file of FTP to be received.

Username: Enters the user's account when connecting to FTP.

Password: Enters the user password for connecting to FTP.

-JPEG Settings

Sets up the creation condition, screen size, color and name of JPEG file to be sent to FTP.

Pre event: Creates the JPEG file of chapter 1~5 for 1~2 seconds before the event is generated.

Post event: Creates the JPEG file of chapter 1~15 for 1~2 seconds after the event is generated.

Image size: Selects the size of JPEG file to be created among 160X120 and 320X240.

Color: Selects the color or B&W of JPEG file to be created.

Base name: Write in the basic name of file to be created.

Except for the basic name, It is possible to add supplementary names for discriminating multiple files.

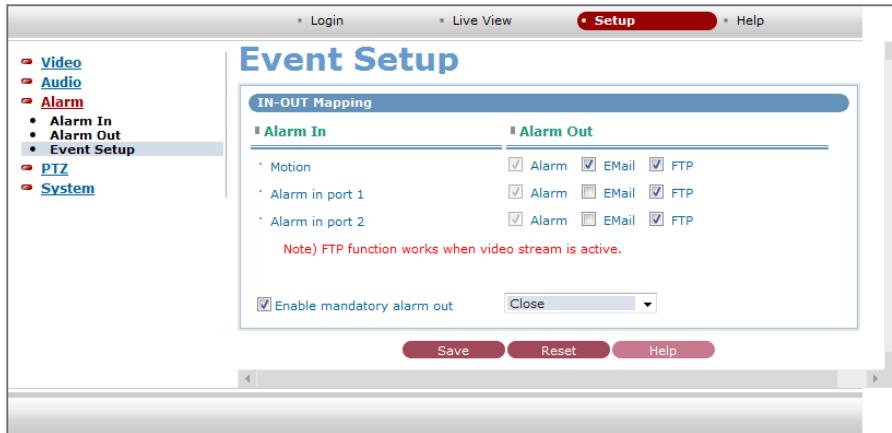
Additional suffix: Selects one among date, time and the number of sequence created.

None: Do not add supplementary names.

Date Time: Adds the date and time when the file was created behind the basic name.

Sequence: Adds the number in sequence of file creation behind the basic name.

● Event Setup



■ IN-OUT Mapping

By connecting the Alarm OUT operations to the events occurred from the Alarm IN, users can send an eMail or FTP Server.

Alarm IN - Alarm IN comes in Motion, Alarm in port 1 and Alarm in port 2.

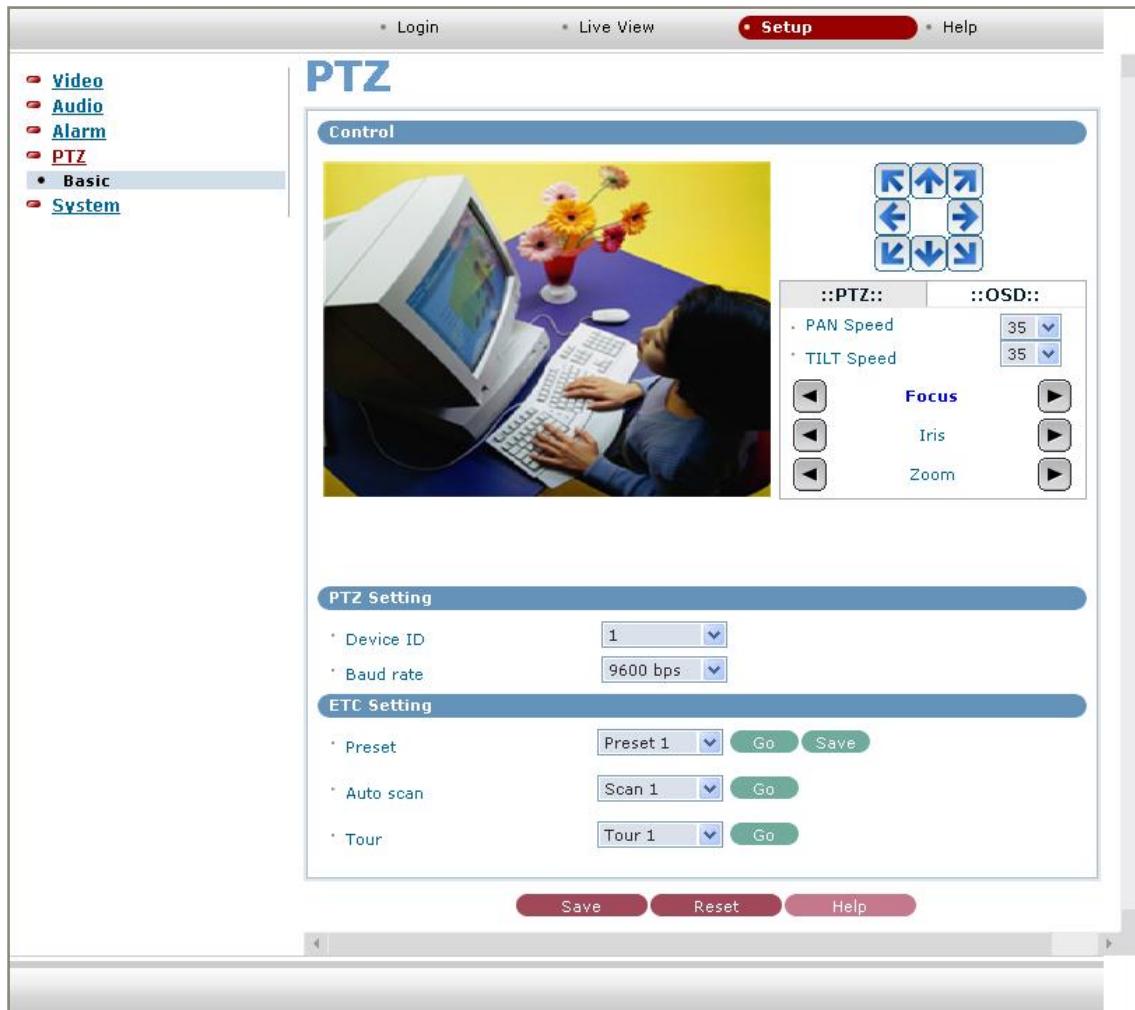
Alarm OUT - Alarm: Operate the equipment connected to the Alarm OUT port to the events occurred from the Alarm IN.

email: Send an eMail to events occurred from the Alarm IN.

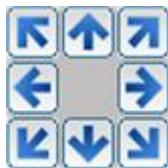
- FTP: Sends the captured picture to FTP by the event which occurs from Alarm input.
 Enable mandatory alarm out: Enable alarm control to open/close contact.

3.3.4 PTZ Setting

- Basic



- Control



Left or Right button: Go into the sub-menu items.
 Execute the command (exit).
 Change value.
 Navigate through the menu items.
 Up or Down button: Navigate through the menu items.



When mouse in the red area click, It moves with the direction.

::PTZ::	::OSD::
PAN Speed	35 ▾
TILT Speed	35 ▾
Focus	[◀] [▶]
Iris	[◀] [▶]
Zoom	[◀] [▶]

-PTZ

PAN / TILT Speed: It sets a speed when adjusting the Network Dome Camera. The higher a value is, the faster a speed will be.
 Focus: Overrides auto focus. Moving the Zoom handle reactivates Auto Focus mode.
 Iris: Overrides auto iris. Moving the joystick reactivates Auto Iris mode.
 Zoom: Zoom control.

::PTZ::	::OSD::
Zoom	[◀] [▶]
MENU	ESC
HOME	CTRL On
PRESET	SCAN
TOUR	

-OSD

Zoom: Change value. Enter editing title.
 MENU: Enters programming menu.
 ESC: Cancels current inputs. Exits from currently running functions or menu, error status, etc
 HOME: Immediately calls Home function.
 Deletes selected value or function in programming mode
 CTRL On: Control function.
 Ex) CTRL + Up, Down, Right, Left Button >> Operated turbo mode.
 PRESET: Pressing 'Prst' will bring up the preset programming menu.

SCAN: Pressing 'Scan' will bring up the Auto Scan programming menu.

TOUR: Pressing 'TOUR' button will bring up the tour programming menu directly.

PTZ Setting		
Device ID	1	▼
Baud rate	9600 bps	▼

ETC Setting		
Preset	Preset 1	▼ Go Save
Auto scan	Scan 1	▼ Go
Tour	Tour 1	▼ Go

■ PTZ Setting

- Device ID: Setting Network Dome Camera Address(ID)
- Baud Rate: Setting Network Dome Camera Baud Rate. (Default 9600 bps)

■ ETC Setting

- Preset: Save preset. Recall preset.
- Auto Scan: Calls Auto panning function.
- Tour: Recalls programmed presets or functions sequentially.

It will be able to control with the keyboard.

-Keyboard Short Cut Key

Keyboard Key Label (PC Keyboard)	Function (Fastrax Control Keyboard)
←	Pan left
→	Pan right
↑	Tilt up
↓	Tilt down
Shift + →	Pan speed level up
Shift + ←	Pan speed level down
Shift + ↑	Pan speed level up
Shift + ↓	Pan speed level down
Shift + '1'	PTZ mode
Shift + '2'	OSD mode
f	Focus mode <ul style="list-style-type: none">- Page up (far focus)- Page down (near focus)
i	Iris mode <ul style="list-style-type: none">-Page up (open iris)-Page down (close iris)
z	Zoom mode <ul style="list-style-type: none">-Page up (zoom in)-Page down (zoom out)
m	MENU
ESC	ESC
h, HOME	HOME
Ctrl	CTRL
r	PRST
s	SCAN
t	TOUR
p	PTRN

3.3.5 System Setting

● Users Setting

This Network Dome Camera's Authority Policy

1. Anonymous User Access Permit Mode

This mode enables any anonymous users to have an access to the Network Dome Camera to monitor and set it.

2. Anonymous User Access Denial Mode

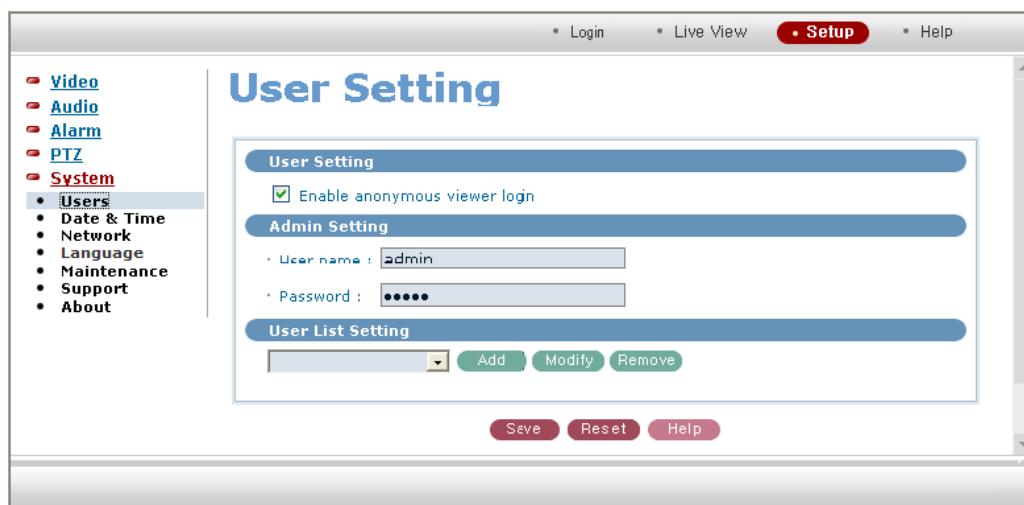
Upon selecting this mode, the Network Dome Camera operates in two authority groups. And it also requires a log-in process when users are to have an access to the Network Dome Camera to change a screen monitoring or setting.

1) Administrator Authority Group (admin)

It enables administrators to change the screen monitoring and setting of the Network Dome Camera. In addition, this authority allows only one user to have an access to the Network Dome Camera at once.

2) General User Authority Group (user)

It enables users to simply use a screen monitoring function. It disables users to change the Network Dome Camera setting but allows them to have a multiple access at the same time.



■ User setting

Enable anonymous viewer login: Check it when users do not want to use the Network Dome Camera without the user account.



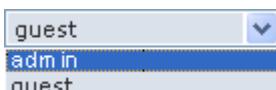
When using the user account, users have to try log-in at every access.

■ Admin Setting

User name: Enter a user name for the administrator use.

Password: Enter the password for the administrator use.

■ User List Setting



Show a registered user account.

- Add User

guest

User Name: michael

Password: ****

Add Cancel

Enter a user name and password to be added, and register them by pressing the “Add” button.

- Modify User Information

michael

User Name: michael

Password: ****

Modify Cancel

After selecting a user to be corrected and changing its name and password, press the ‘modify’ button to reflect the corrected information.

- Delete User Account

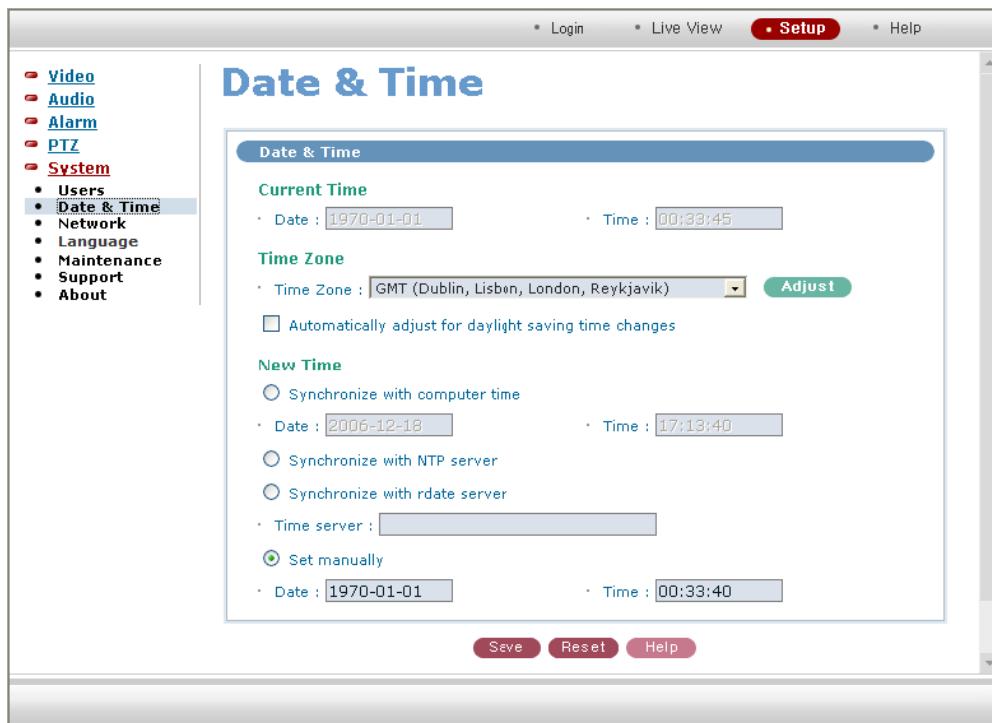
michael

User Name: michael

Remove

After selecting a user to be deleted, delete it by pressing the “Remove” button.

● Date & Time Setting



■ Date & Time

Current Time: Indicate a current time.

- Date: Indicate a current day, month, and year.
- Time: Indicate a current day, month, and year.

New Time

- Time Zone: Select a time zone to be used.
 Automatically adjust for daylight saving time changes:
Check it if users are to apply the Summer Time.

Time zone

◎ Synchronize with computer time: Synchronize the time with that of a current user computer.

◎ Synchronize with NTP server: Synchronize the time with that of the NTP server.
Receive the time information from the NTP (RFC2030) server.

◎ Synchronize with date server: Enter the Time Server address to be synchronized.
Receive the time information from the Time Server that complies with the Time protocol (RFC868).

◎ Set manually: Users enter a current time directly.

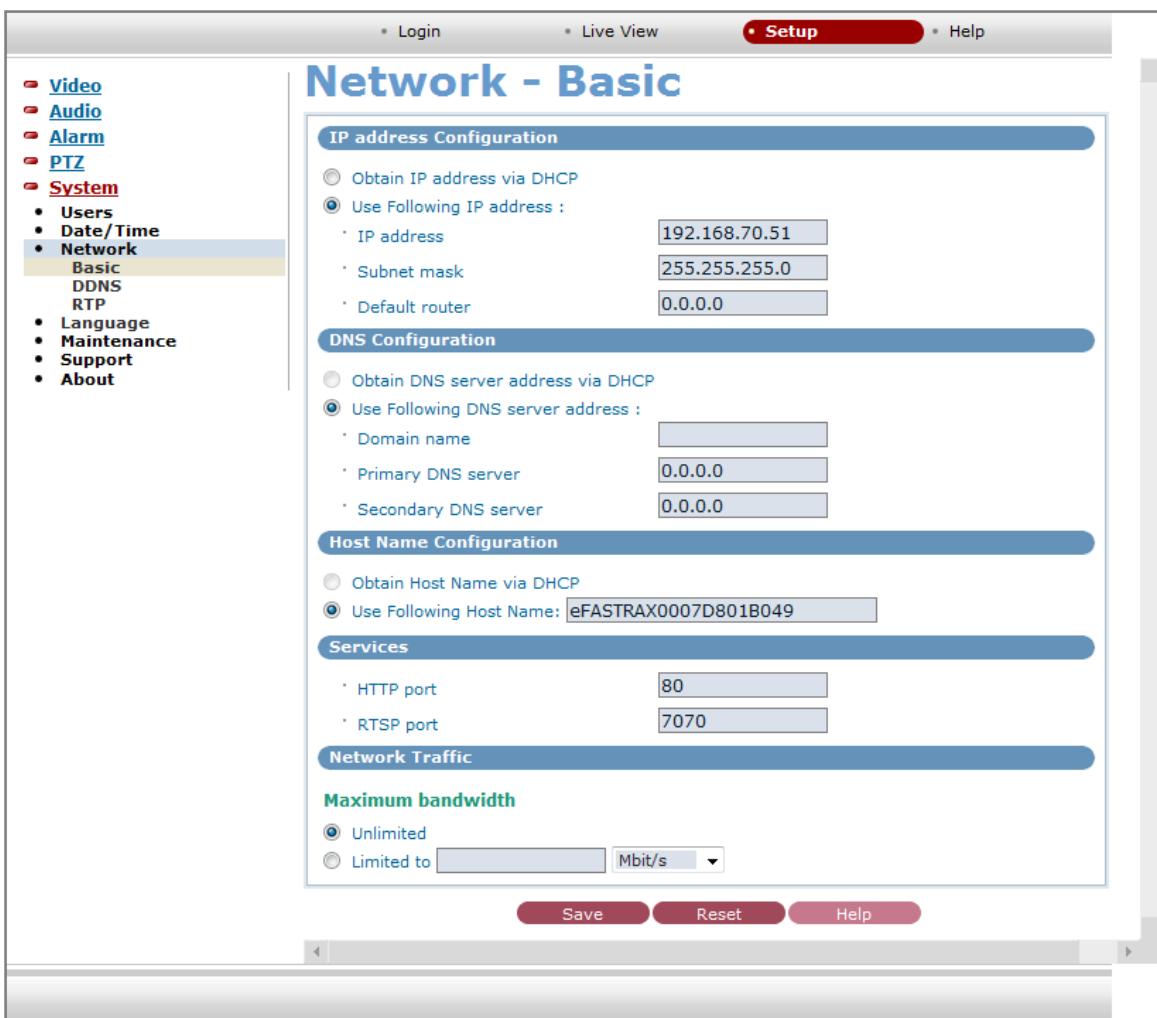
- Date: Enter a current day, month, and year.
- Time: Enter a current day, month, and year.

● Network Setting

Setting in regard to network can be executed. Settings for IP, DNS, Host Name, Port, and Network traffic can be established, along with setting for DDNS and RTP.

◆ Basic Setting

Basic settings for IP, DNS, Host Name, and Port are possible, and possibly works as a adjustment role in reducing the overload of network bandwidth in use, by applying Network traffic capability.



■ IP address Configuration

- ◎ Obtain IP address via DHCP : Obtain an IP through the DHCP automatically.
- ◎ Use Following IP address : Users enter a Network Dome Camera IP directly.

■ DNS Configuration

- ◎ Obtain DNS server address via DHCP: Obtain the DNS information through the DHCP.
- ◎ Use Following DNS server address: Users enter the DNS information directly.
 - Domain name: Enter a domain name to be used.
 - Primary DNS server: Enter the first domain name server.
 - Secondary DNS server: Enter the second domain name server address.

■ Host Name Configuration

- ◎ Obtain Host Name via DHCP: Obtain a Network Dome Camera name from the DHCP automatically.
- ◎ Use Following Host Name: Users enter a Network Dome Camera name directly.

■ Services

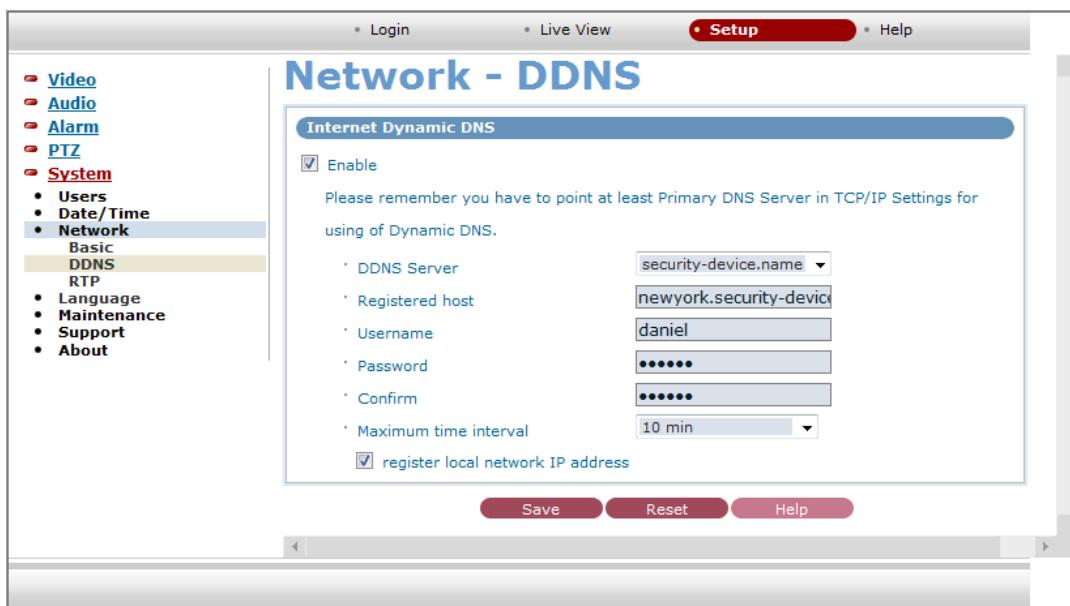
- HTTP port: Enter a port to receive a service through the HTTP.
Default Port Number is '80'.
- RTSP port: Enter a port to receive a service through the RTSP.
Default Port Number is '7070'.

■ Network traffic - Maximum bandwidth

Set a limitation on user network resources by designating the maximum bandwidth.

- Unlimited: Selected if not influenced by a network-related program or equipment
Without a limitation on the network bandwidth.
- Limited to: In case of sharing other network programs or equipment, it is possible to set a limitation on the maximum bandwidth in the unit of Mbit/s or kbit/s.

◆ DDNS Setting



■ Internet Dynamic DNS

When using the high-speed Internet with the telephone or cable network, users can operate the Network Dome Camera even on the floating IP environment in which IPs are changed at every access.

Users should receive an account and password by visiting a DDNS service like <http://www.dyndns.com/>.

Enable

Check to get DDNS service to be available.

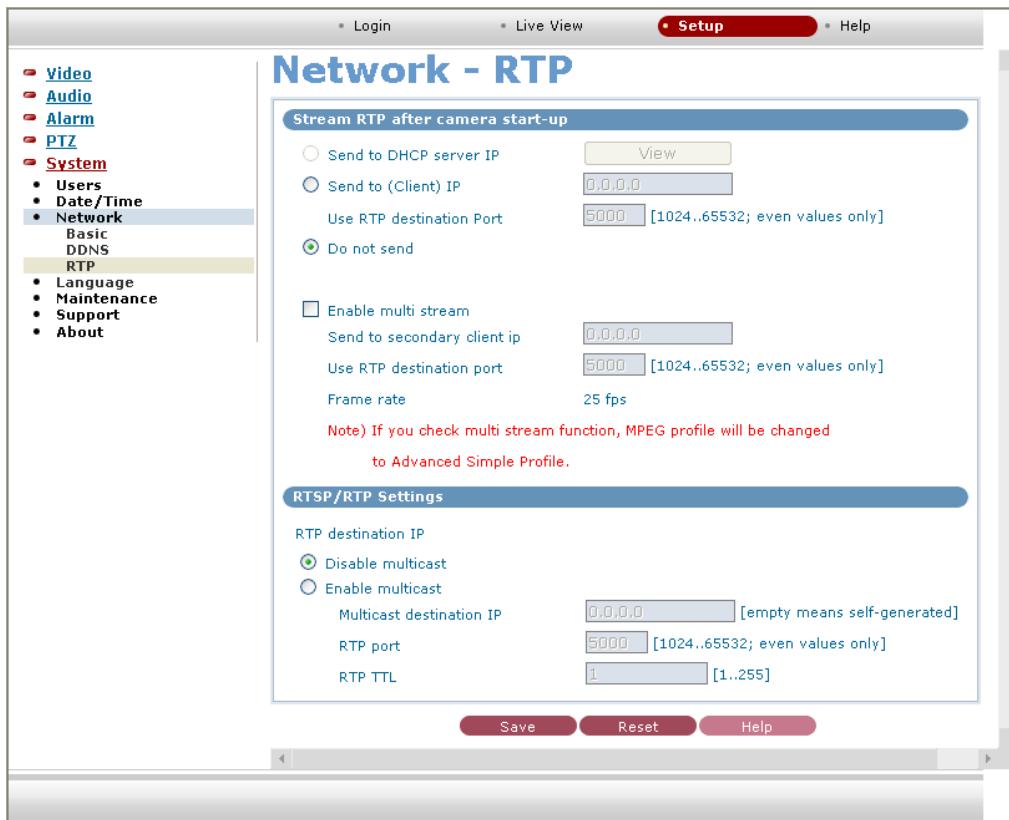
- DDNS Server: Select the ddns server.
- Registered host: Enter a host address.
- Username: Enter an ID to access to the DDNS server.
- Password: Enter a password to be used for accessing the DDNS server.
- Confirm: Enter a password again to confirm it.
- Maximum time interval: Set a time interval to synchronize with the DDNS server.



- Register local network IP address: Register a Network Dome Camera IP address to the DDNS server.

◆ RTP Setting

Have a setting for sending and receiving an audio or video on a real-time basis.



■ Stream RTP after Network Dome Camera start-up

Enter a destination IP and Port to send movie data automatically through the RTP while the Network Dome Camera has booting.

◎Send to DHCP server IP: Send movie data to the DHCP server.

◎Send to (Client) IP: Send movie data to other certain destination addresses.

 Use RTP destination Port: Available from 1024 to 65532, and the default is 5000.

◎Do not send: Do not send a stream to the FTP until it is requested from a client.

□ Enable multi stream

Check it to send data for the purpose of saving them into an external extension storage right after the Network Dome Camera operates.

-Send to secondary client ip: Enter an IP address of the external extension storage.

-Use RTP destination port: Enter a Port number of the external extension storage.

 The Port number to be used is [1024 ~ 65532].

-Frame rate: Indicate a frame rate that is sent to the external extension storage when the multi stream works.

Once the multi stream function is checked, the MPEG profile setting will be changed to the Advanced Simple Profile.

■ RTSP/RTP settings

Perform a multicast setting to send a video and audio to multiple users. (Up to 10 users)

RTP destination IP

◎Disable Multicast: Do no use the multicast.

◎Enable Multicast: Use the multicast.

Multicast destination IP: Enter an IP between 224.0.0.0 and 239.255.255.255. Although it is empty, an IP will be entered automatically.

RTP port: Enter a value between 1024 and 65532.

RTP TTL: Enter a value between 1 and 255. If a network status is smooth, enter a lower value. On the other hand, if a network status is poor, enter a higher value. When there are many Network Dome Camera or users, a higher value may cause a heavy load to the network. For a detailed setting, please consult with a network manager.

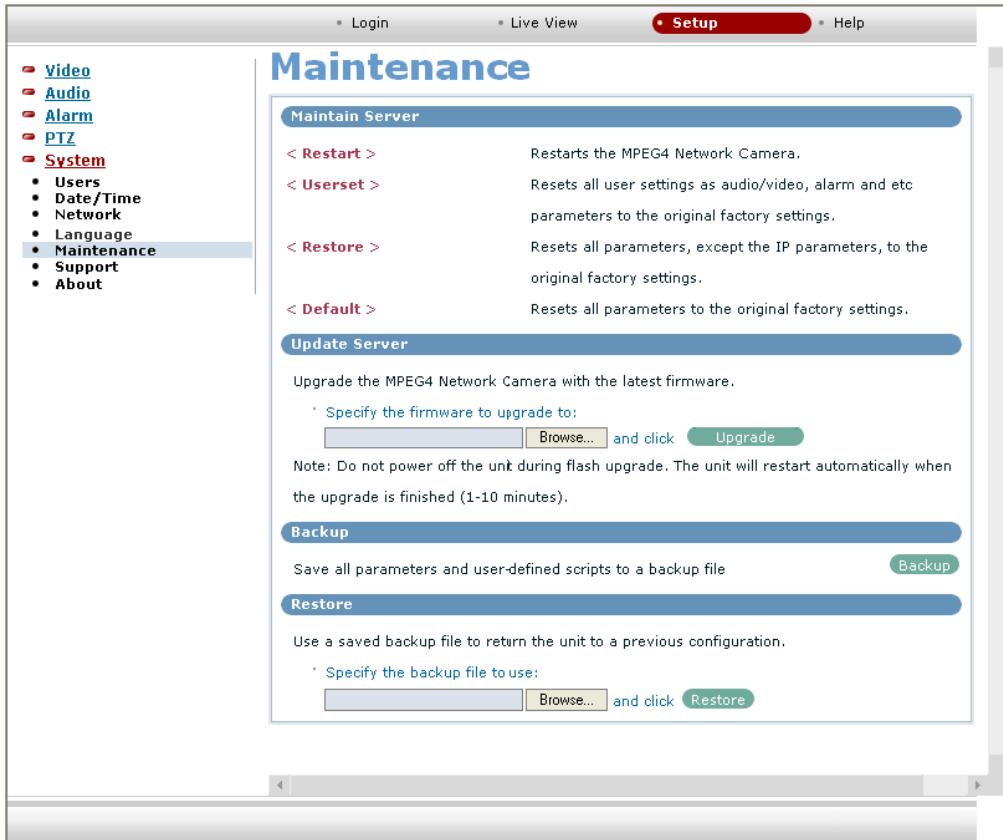
◆ Language



▪ Language

It will be able to select a user language. The type of language it will be able to select is the English, the French, the German, the Spanish and the Italian.

● Maintenance



■ **Maintain Server**

- < Restart > Restart the Network Dome Camera.
- < Userset > Initialize a user setting value of audio/video, alarm, etc.
- < Restore > Restore all the values except a network-related setting to a basic value.
- < Default > Restore all the setting values to a basic value.

■ **Upgrade Server**

Carry out the upgrade by importing an upgrade file and pressing the 'Upgrade' button.
During the upgrade, do not turn off the power of the Network Dome Camera.
And try an access again after waiting five minutes or longer.

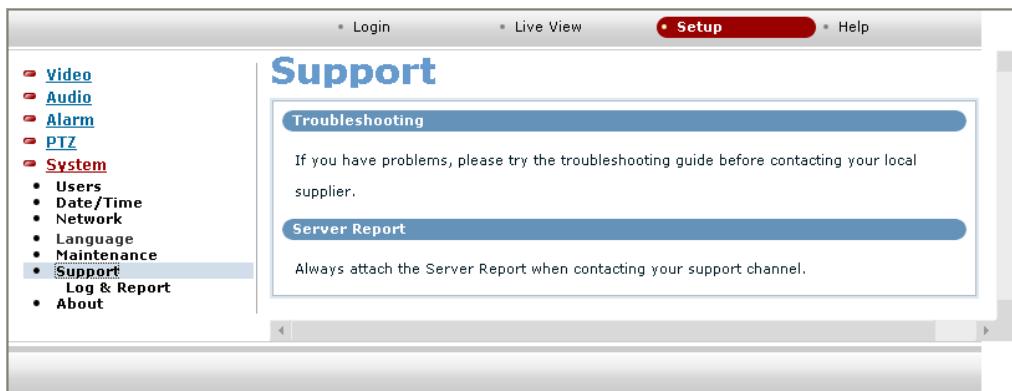
■ **Backup**

Save a setting value that users enter to the Network Dome Camera, to a user PC.

■ **Restore**

Import and apply a setting value saved to a user PC.

● **Program Support Information**



■ **Troubleshooting**

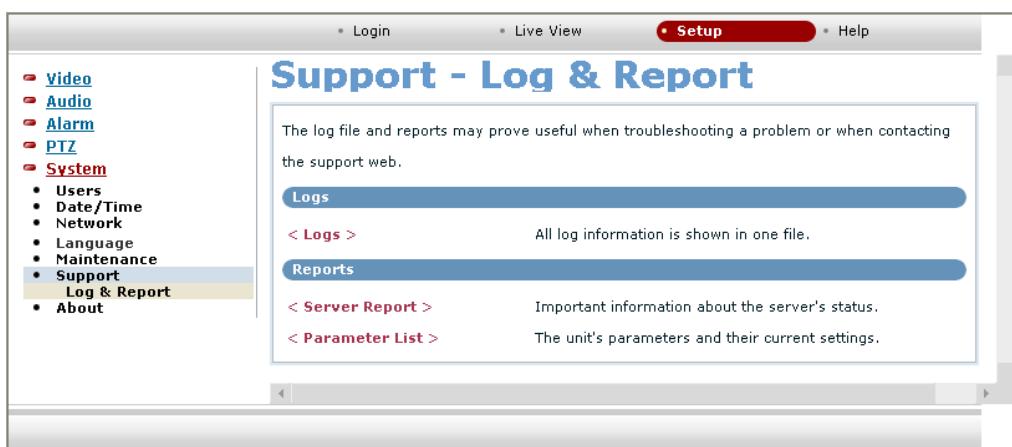
When problems occur during operation, please consult with an installer.

■ **Server Report**

If its support is requested, please attach a server report.

◆ **Log & Report**

Users can check the system log and server report.



■ Logs

```

Log Information

/*
----- CGI log -----
run as liveview.html in Jan 9 01:31:35 1970
REQUEST_METHOD = GET
QUERY_STRING = (null)
REMOTE_HOST = (null)
REMOTE_USER = (null)
AUTH_TYPE = (null)
run.cgi/admin/liveview.html(null)
parse_cgi_line.cgi_line = (null)
parse_cgi_line.cgi_line_size=160
parse_cgi_line.cgi_line_offset=0
cg_liveview: width=160 height=128
main: exec_time: 167031 uses
main: OK

main: /* ----- */
run as liveview.html in Jan 9 01:32:16 1970
REQUEST_METHOD = POST
QUERY_STRING = (null)
SCGI_TYPE = (null)
REMOTE_HOST = /Adaptive/liveview.html
REMOTE_USER = (null)
Auth_Type = (null)
run.cgi/admin/liveview.html&size=160
parse_cgi_line.cgi_line_size=160
parse_cgi_line.cgi_line_offset=0
cg_liveview: width=160 height=128
main: exec_time: 167031 uses
main: OK

main: /* ----- */

```

Users can check the log for Network Camera operation by clicking the < Logs >.

■ Reports

```

Log Information

firmware version=4.1-1-279
/*
----- System information -----
Linux version 2.4.18-1 (root@ns.lom22.brest.br) (gcc)
/*
----- Uptime -----
15:17:03 up 5 days, 15:17, load average: 0.03, 0.01
/*
----- Mounted filesystems -----
/ (ext3) mounted on / (rw)
none (proc) mounted on /proc (rw)
none (dev/shm) mounted on /dev/shm (rw)
none (tmpfs) mounted on /tmp (rw)
/proc/mounts (tmpfs) mounted on /proc/mounts (rw)
/*
----- Running processes -----
PID_Uid_VmSize_Command
1 root 260 0 init
2 root 100 [kexec]
3 root SW [kswapd_CPU0]
4 root SW [kswapd]
5 root SW [kupdated]
7 root SW [mtabload]
10 root SW [idle]
90 root 256 5 /sternyslogd -m 0

```

Users can check a server report by clicking the < Server Report >.

```

Parameters List

net=41
name=es00007D800F01A
net_dev=eth0
net_ip=169.254.52.5
net_gw=169.254.52.1
net_limit=0
rsp_port=7070
rsp_start=0
rsp_end=0
rsp_ip=0.0.0.0
rsp_port=5000
rsp_start=0.0.0.0
rsp_end=0.0.0.0
rsp_ip=5000
rsp_port=5004
rsp_start=0.0.0.0
rsp_end=0.0.0.0
height=128
width=160
max_size=1024
mpeg4_rc_vbr
mpeg4_fov=30
mpeg4_gov=30000
mpeg4_qov=30
mpeg4_filter=strong
mpeg4_q0=0
input=rtsp

```

Users can check a parameter by clicking the < Parameter List >.

● Program Information

The screenshot shows the 'About' page of the Network Dome Camera's web interface. The left sidebar has a 'System' section with a 'About' link highlighted. The main content area displays the title 'About' and the text 'MPEG4 Network Camera operating system is based on the Linux 2.4 kernel.'

The following website will provide the support information for the Network Dome Camera system information and operation.

3.4 Help

The screenshot shows a 'Table of Contents' help window. It lists various sections such as Video, Audio, Alarm, PTZ, System, and PTZ. Under the System section, it includes sub-sections like Users, Date & Time, Network, Basic, and Support.

The Help information window will be provided as a popup window so that users can open and read it without a need for log-in. It will offer a description on setting and Help page by which users can manipulate the Network Dome Camera without a reference to the manual.

Chapter 4 — Appendix

4.1 Product Specification

MODEL		PAL
C A M E R A	Image Sensor	1/4" Ex-view HAD Color CCD (Sony)
	Picture Element	752 x 582 Approx 440K pixels
	Horizontal resolution	470 Lines
	Lens	18x optical zoom with auto focus 12x digital zoom F1.4 to F3.0, f=4.1 mm to 73.8mm
	View Angle	Approx 48° (WIDE end) to 2.7° (TELE end)
	Minimum Illumination	0.7 lux (F1.4 normal shutter speed)
		0.05 lux (F1.4, 1/3s)
		0.01 lux (1/4s with IR Cut Filter Removed)
	S/N ratio	more than 50dB
N E T W O R K	Display resolutions	D1(PAL: 720 x 576), 640x480, 320x240, 160x120
	Maximum frame rate	25 fps@720 x 576
	Video compression format	MPEG-4 Part2(ISO/IEC 14496-2), Profile: SP and ASP
	Audio compression format, I/O terminal	PCM 16/8-bit, Full duplex, 3.5mm Mic in x1 and speaker out x1
	Alarm and event management	Built-in motion detection, Adjustable sensitivity and dwelling time, Emailing FTP
	Protocols	TCP/IP, UDP, HTTP, RTP, RTSP, DHCP, SMTP, DDNS
	Ethernet	10Base-T/100Base-T (RJ-45)
	Pre/Post event	Max. 180sec
	Image setting	Color, Brightness, Contrast
	Event recording / Email notification	
	Remote upgrade / Time/Event search	
	Remote set-up/viewer / Access level	Yes
	Multicasting capability	
	Bandwidth control	
	Alarm/Event/Time searching	
E L E C T R I C A L	Minimum Operation System	Microsoft Windows 2000/XP, Intel Pentium IV 2.0GHz or higher, 512MB or more
	Web browser	Microsoft Internet Explorer version 6.0
M E C H A N I C A L	Input Voltage	12VDC, built-in power-supply
	Power Requirement	12V DC 1.2A
	Power Consumption	Maximum 12W
	Alarm Output	1 Normal relays 24VDC/1A Max. (selectable NC/NO)
	Alarm Input	2 Normal dry contact (selectable NC/NO)
	Control	RS-485 baud rate: 2400~230k bps (default: 9600bps)
	Access Time	0.75 second maximum preset recall time
	ID (Camera Address)	999 (Factory mode selectable over 999 camera)
ENVIRONMENT	Dimension	See Figure 4 (4 page)
	Weight	Approx 1.2 kg
	Pan Angle	360° continuous rotation
	Speed	0.1° to 90°/sec. (proportional to zoom)
		360°/sec. maximum (with CTRL/PGM key pressed)
		Preset Speed: 380°/sec
	Repeatability	0.2°
	Flip	Rotate 180° at bottom of tilt
	Autoscan	8 auto scan include vector scan
GENERAL	Preset Position	80 positions with camera status (16-character title)
	Tour	8 tours
GENERAL	On-Screen Display	Displays camera ID and area name on screen
	Operating Temperature	0°C to 45°C (32°F to 113°F)
ENVIRONMENT	Operating Humidity	0 to 90%RH (non-condensing)
	Storage Temperature	-20°C to 60°C (4°F to 140°F)
GENERAL	Certification	CE (EMC)

* Specifications are subject to change without notice *

4.2 Troubleshooting

If problems occur, verify the installation of the camera with the instructions in this manual and with other operating equipment. Isolate the problem to the specific piece of equipment in the system and refer to the equipment manual for further information.

PROBLEM	AREA TO CHECK
No video	Verify that power is connected to all pieces of equipment in the system. Verify that the power switches are in the ON position. Check the video connections. (see page 4)
Poor video quality.	Check that the BNC connectors are inserted properly. Check the voltage level of the network dome camera. Cable for video is shielded.
Network Dome Cameras lose their positions.	Reset the cameras using the Dome configuration menus. Check that the network dome cameras are inserted properly in the base. Check the voltage level of the network dome camera.
Camera number does not match the number on PC Program or Web browser.	Check the camera ID of the Network Dome Camera. Check PTZ setting on the PC Program and Web browser.
Frame rate decrease.	Change current value more lower resolution, compression rate and frame rate.
A connection is cut-off at short intervals.	Check network traffic and contact with network administrator.

4.3 Glossary

Alarm Actions

The assigned responses for the network dome camera when inputs change from normal to abnormal states. The dome may run a Preset, Pattern, or have no assigned action for each of the four dome inputs. The dome may also send alarm states to the host controller for processing. See also Input and Normal Input State.

Areas

Programmed start and end points of the dome's field of view around its pan axis. Each area is a part of a circular viewing area that extends around the dome. The areas can be different sizes. Up to 16 areas can be programmed for the dome.

Automatic Gain Control (AGC)

Allows for the amplification of the video signal in scenes with minimal ambient light. Many low-light scenes result in picture noise. As gain is increased, the picture noise is also amplified. When AGC is enabled, the value of the gain setting is based on feedback from the camera. When AGC is disabled, the camera uses the value set for the manual gain setting. The trade-off between picture level and noise may be adjusted when AGC is disabled.

On-screen Menu

The text overlay menu system used for setting dome features. The utility is accessed using a keystroke combination. The utility provides settings for camera functions, zoom, alarms, text display, and password protection.

Flip

Allows the dome to automatically turn 180 degrees when the camera tilts to its lower limit and stays in that position for a brief delay. When the dome flips (rotates), the camera starts moving upward as long as the tilt control is kept in the down position. Once the control is released, the tilt control returns to its normal operational mode. The flip feature is useful when you need to track someone who walks directly beneath the dome and continues on the other side.

Home Position

The default position to which the network dome camera returns after an assigned period of inactivity passes. The default position may be a Preset, Tour, Pattern, or No Action.

Input Alarm

A connection point on the network dome camera that enables the system to monitor Input Devices. There are four inputs available for the network dome camera.

Input Devices

External devices that provide information about the condition of system components that connect to the inputs on the network dome camera. Typical input devices include door contacts, motion detectors and smoke detectors.

IR Mode

A feature of the camera that permits manual or automatic switching between color and IR (black-and-white) operation. When IR mode is active, clearer images may be obtained under low-light conditions.

Line Lock

Allows you to phase lock the video with the AC power line. When line lock is enabled, it prevents vertical video rolling when switching multiple cameras to a single monitor. If text appears slightly tinted on color monitors, disabling the line lock may prevent this problem.

Name Information

Relates to the display the dome name, the area where the dome is pointing, the name of the preset or pattern that is running, and alarm names. The display of each type of name setting can be enabled or disabled. When the display of camera or area title(name) is enabled, the information appears on the screen continuously. Preset, tour and pattern titles(names) appear only while they are active.

Normal Input State

Describes the expected state of a device connected to one of eight network dome camera's inputs. The normal state may be open or closed. When a device is not in its normal input state, an alarm is issued.

North Position

User-definable setting that may correspond to magnetic north or some well-known landmark. Used to approximate the camera dome's pointing direction when Direction Indicators are enabled.

Low Shutter

Setting used to improve the quality of video obtained in extreme low-light situations. When the Low Shutter setting is enabled, low-light information is collected over multiple fields based on the Shutter Limit setting. As a result, video may appear blurred or choppy in extreme low-light situations. This setting does not effect camera operation in normal lighting situations. See also Automatic Gain Control (AGC).

Preset

Programmed video scene, based on a specific pan, tilt, zoom, and focus settings. Up to 80 presets may be programmed for the network dome camera.

Privacy Zones

Masked areas of the network dome camera's viewing area. These masks prevent operators of the surveillance system from viewing these designated zones. The Privacy Zones move in relation to the network dome camera's pan/tilt position. In addition, the apparent size of the Privacy Zone adjusts automatically as the lens zooms in or out. Up to eight Privacy Zones may be established for a network dome camera.

Shutter Limit

Setting used to define the maximum exposure time for the Open Shutter setting. The values for the setting range from 1/2 to 1/60. The default setting is 1/4.

Vector Scan

Move from start point to end point including tilt and zoom simultaneously and linearly.

WDR

Wide Dynamic Range Technology uses two shutter speeds in alternative video fields-high and normal- every 60th (or 50th) of a second and combines two fields into one progressive scan frame. It allows every detail to be captured accurately even if one portion of an image is brilliantly.

Whether at the high shutter speed or normal shutter speed, the progressive scan CCD provides a horizontal resolution of 470 lines. As a result, combined fields yield a frame of high-quality images.

White balance

Adjustments in the color hue(red and blue) gains for a camera so that true white appears white in the image. It is normally compensated for by the automatic gain control. In some lighting conditions, you may need to manually adjust the red and blue settings for optimal viewing. When Automatic White Balance is enabled, the camera measures the image and automatically adjusts the red and blue settings to balance white. When Automatic White Balance is disabled, the camera uses the values set for the red and blue settings to balance white.

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